## ABSTRACT

A method of fabricating an X-ray detector array element. The method decreases consumption of masks during photolithography. A first mask defines a gate line on a substrate. A second mask defines a semiconducting island on a gate insulation layer. A third mask defines a common line and a data line on the gate insulation layer, and source and drain electrodes are simultaneously formed on the semiconducting island, thereby obtaining a TFT structure. A fourth mask defines a first conductive layer on a planarization layer. A fifth mask defines first and second via holes penetrating the planarization layer. A sixth mask defines a third conductive layer, a fourth conductive layer, and a first opening.